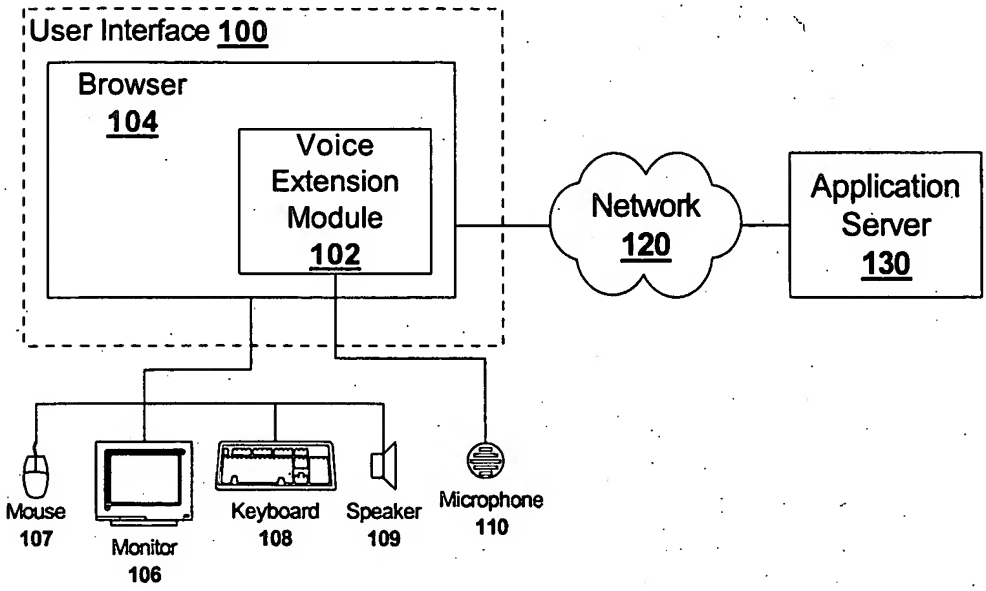
User Interface 100
Browser
104
Voice
Extension
Module
102
Network
120
Application
Server
130
Mouse
107
Monitor
106
Keyboard
108
Speaker
109
Microphone
110

FIG. 1

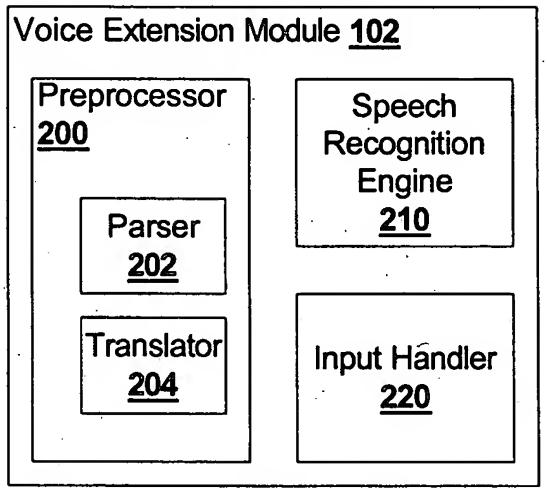
Voice Extension Module 102
Preprocessor
200
Parser
202
Translator
204
Speech
Recognition
Engine
210
Input Handler
220

FIG. 2

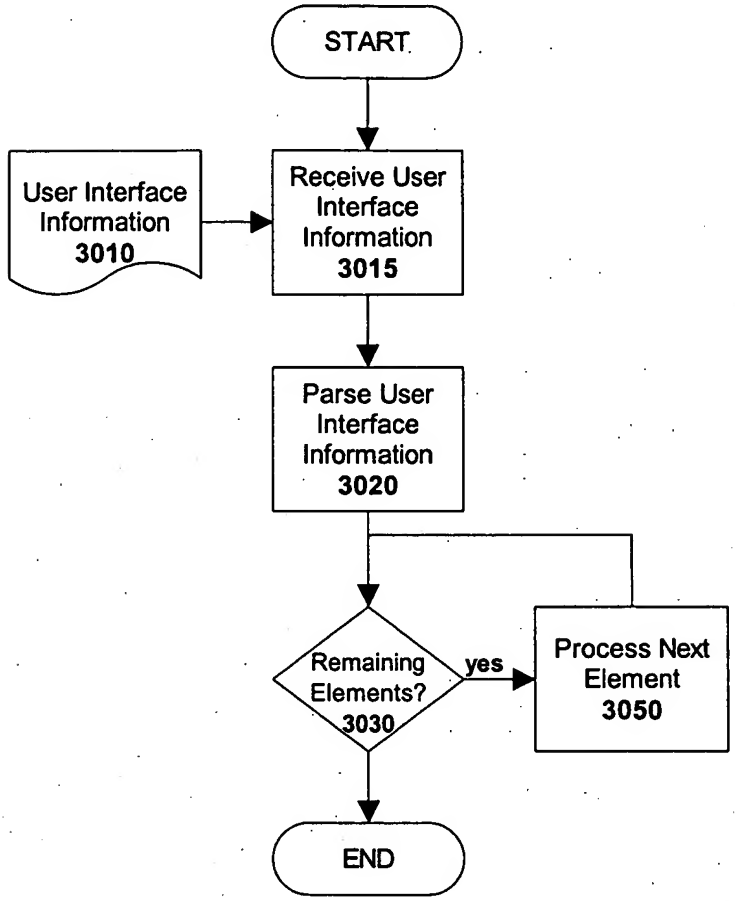
START
User Interface Information 3010
Receive User Interface Information 3015
Parse User Interface Information 3020
Remaining Elements? 3030
yes
Process Next Element 3050
END

FIG. 3

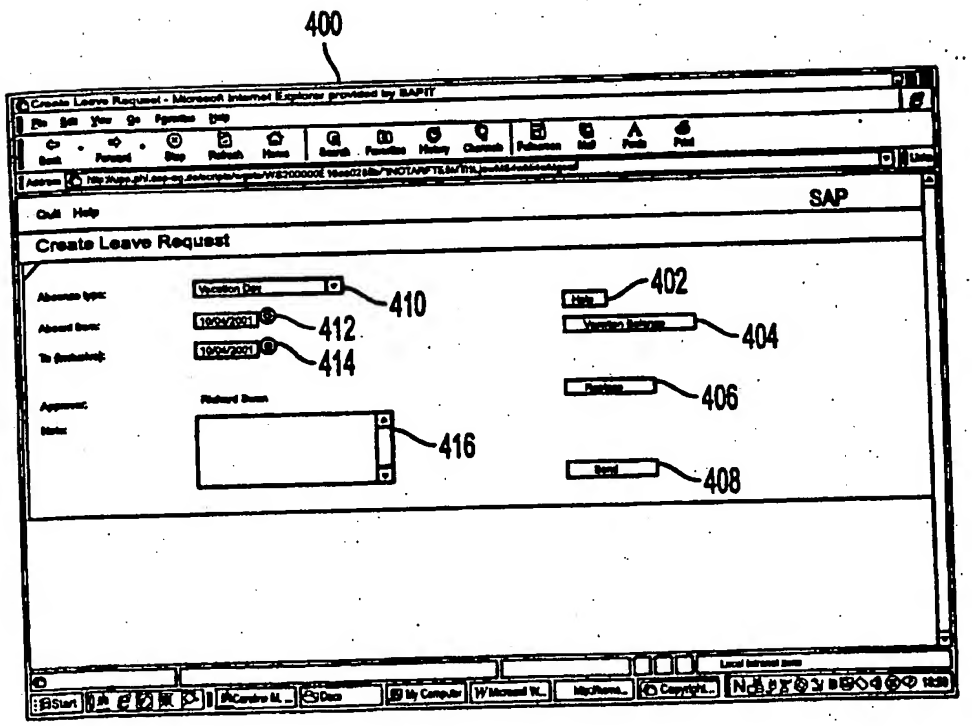

FIG. 4

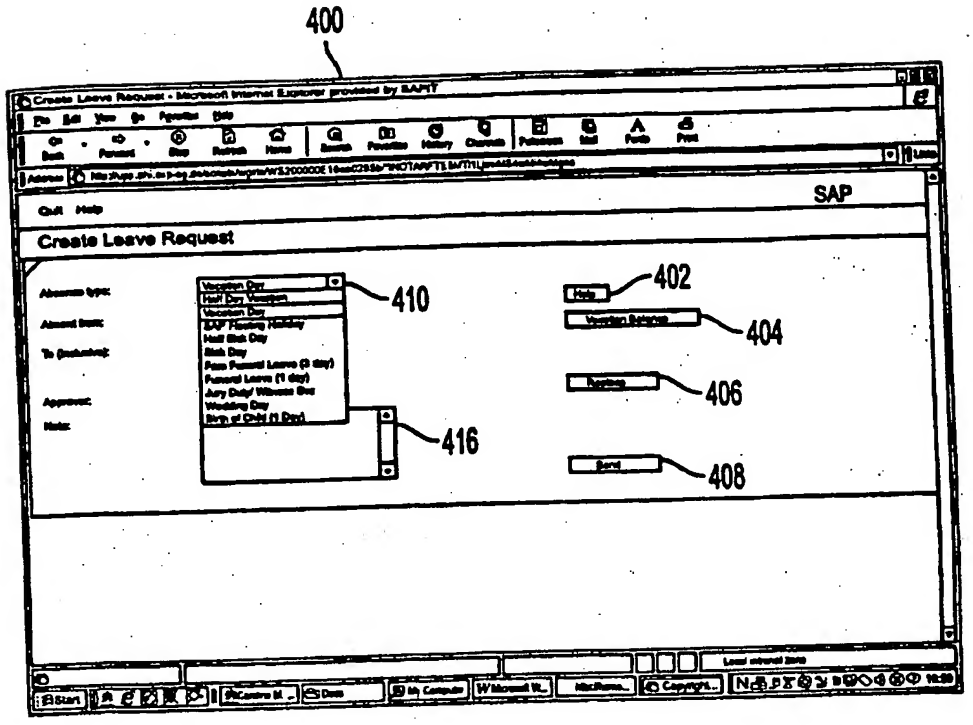

FIG. 5

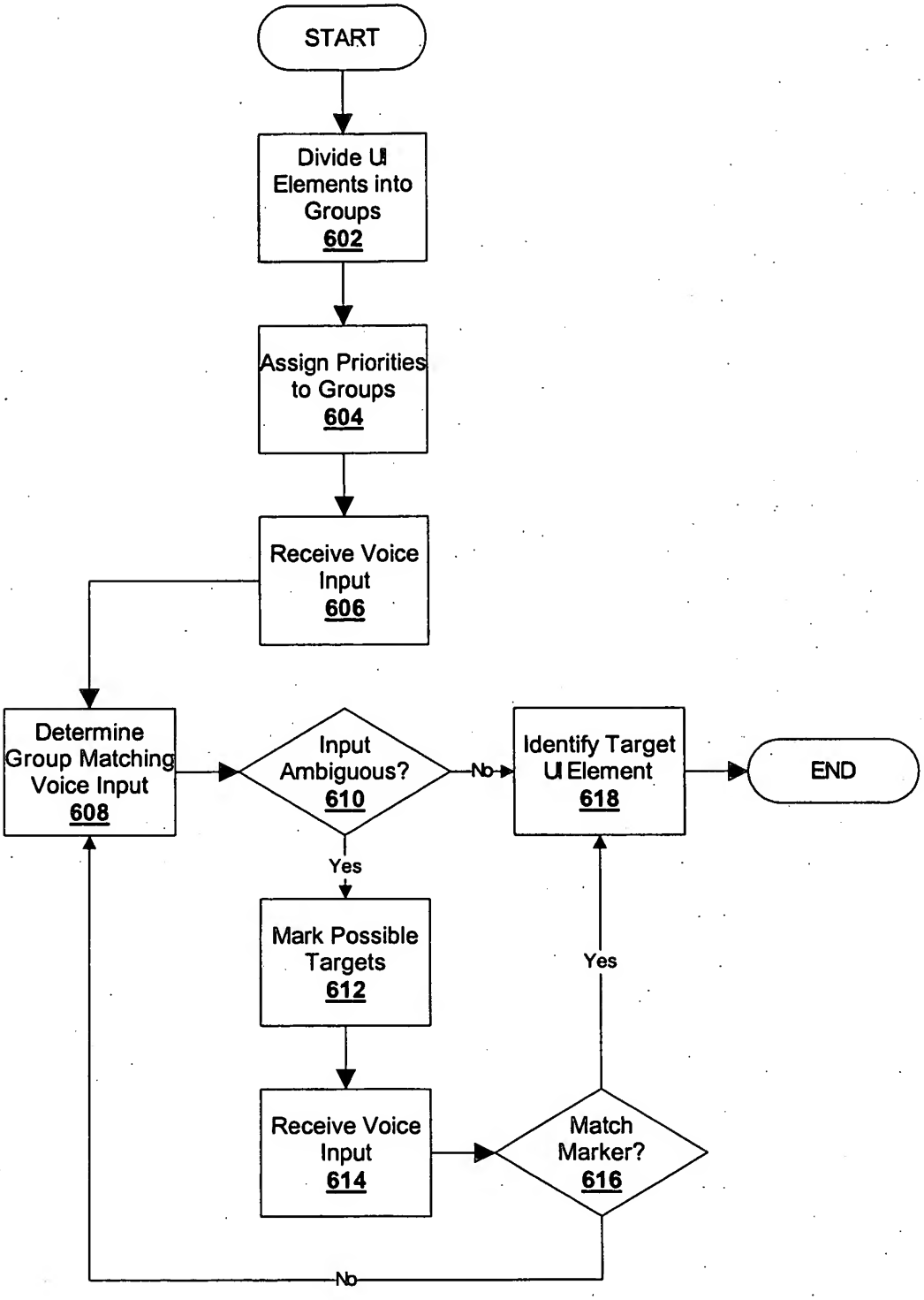
START
Divide UI Elements into Groups 602
Assign Priorities to Groups 604
Receive Voice Input 606
Determine Group Matching Voice Input 608
Input Ambiguous? 610
No
Identify Target UI Element 618
END
Yes
Mark Possible Targets 612
Receive Voice Input 614
Match Marker? 616
Yes
No

FIG. 6

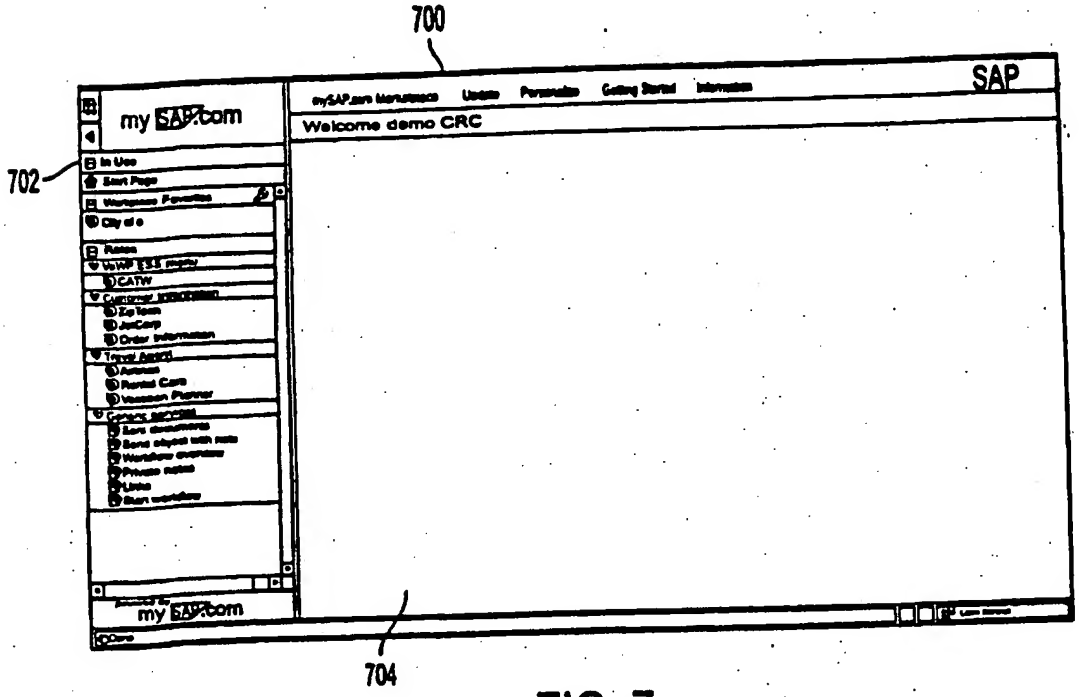
700
702
704
SAP
my SAP.com
Welcome demo CRC

FIG. 7

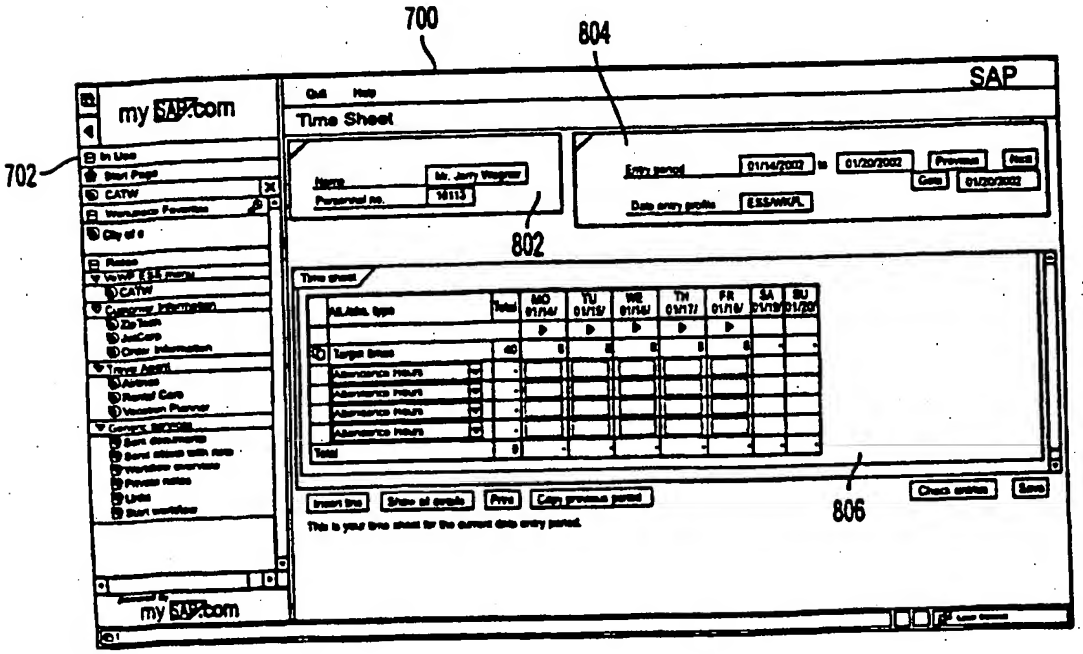
700
804
702
802
806
SAP
my SAP.com
Time Sheet

FIG. 8

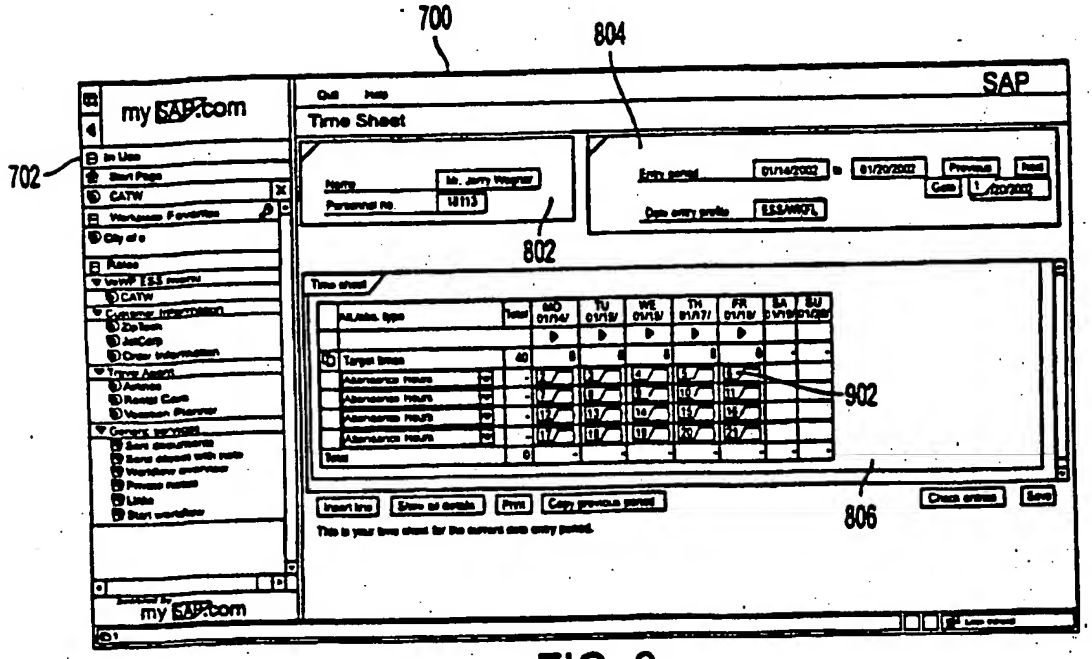
700
804
702
802
902
806
SAP
Time Sheet

FIG. 9

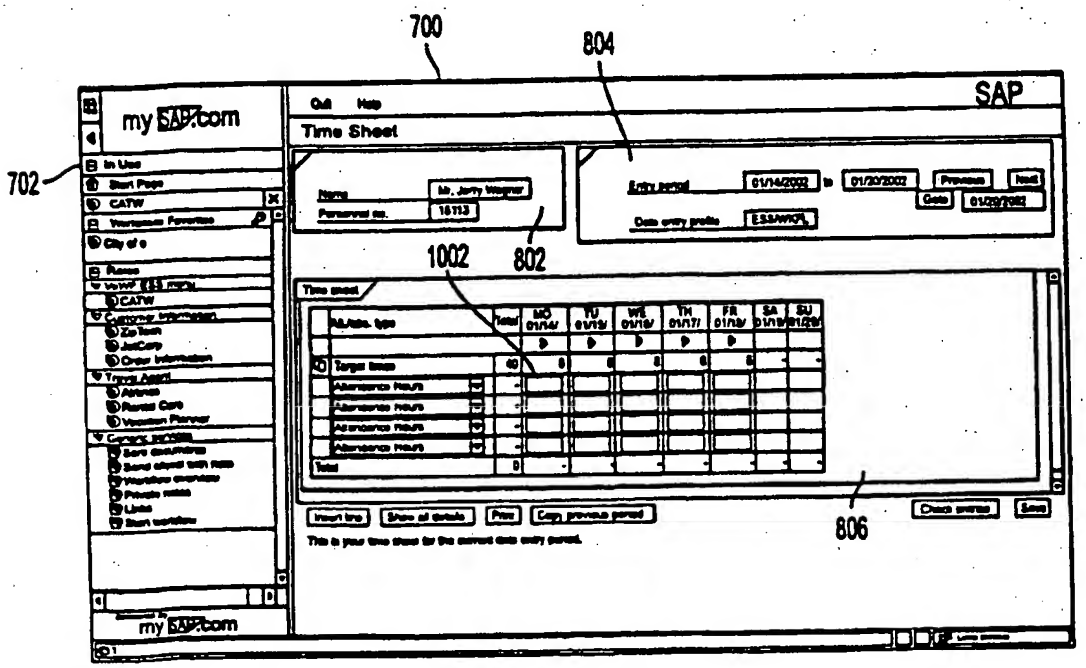
700
804
702
1002
802
806
SAP
Time Sheet

FIG. 10

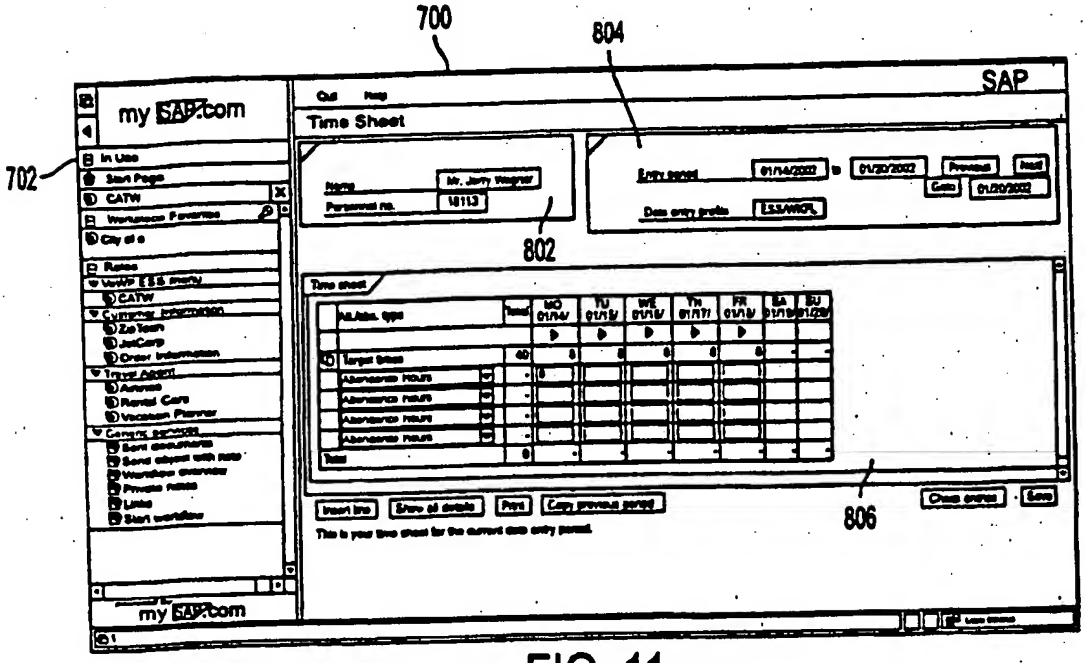
700
804
702
802
806
SAP
Time Sheet
my SAP.com

FIG. 11

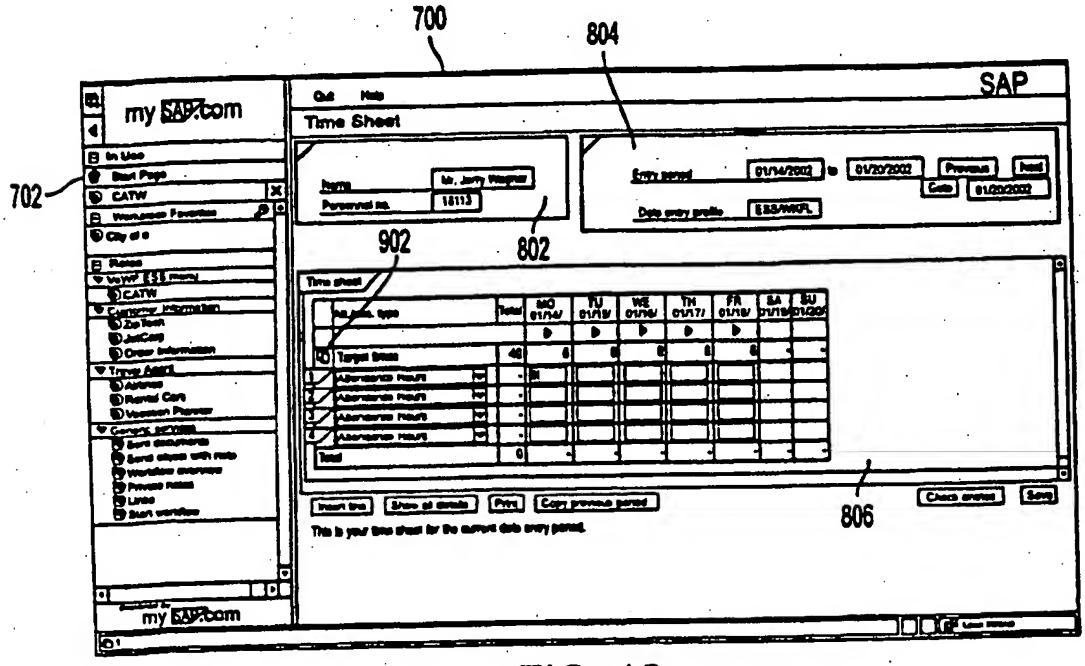
700
804
702
902
802
806
SAP
Time Sheet
my SAP.com

FIG. 12

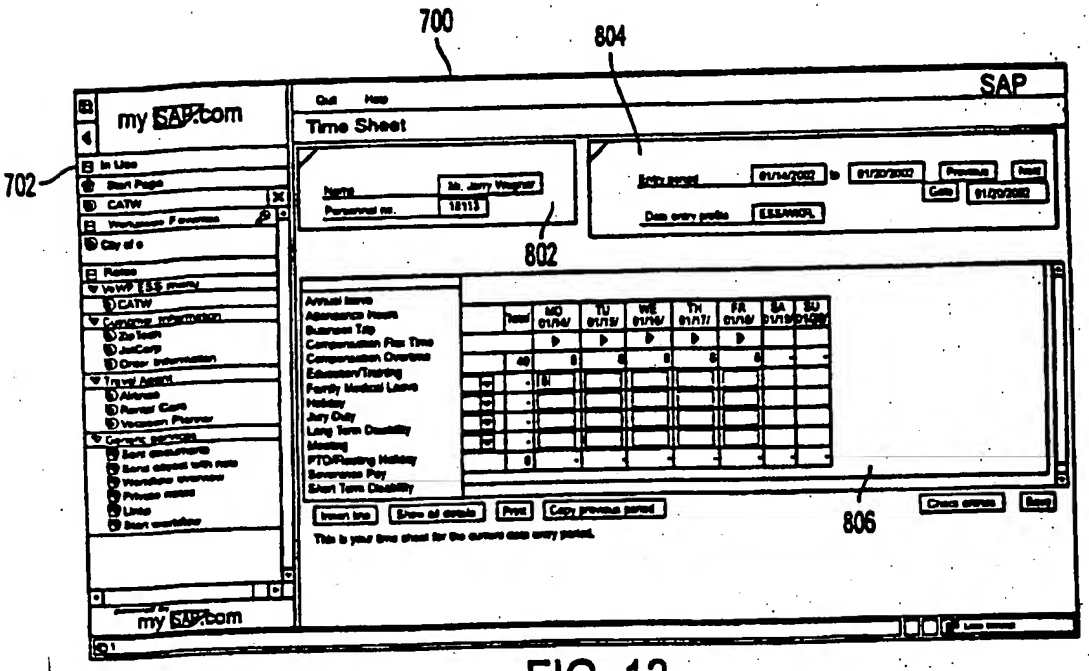
700
804
702
802
806
SAP
my SAP.com
Time Sheet

FIG. 13

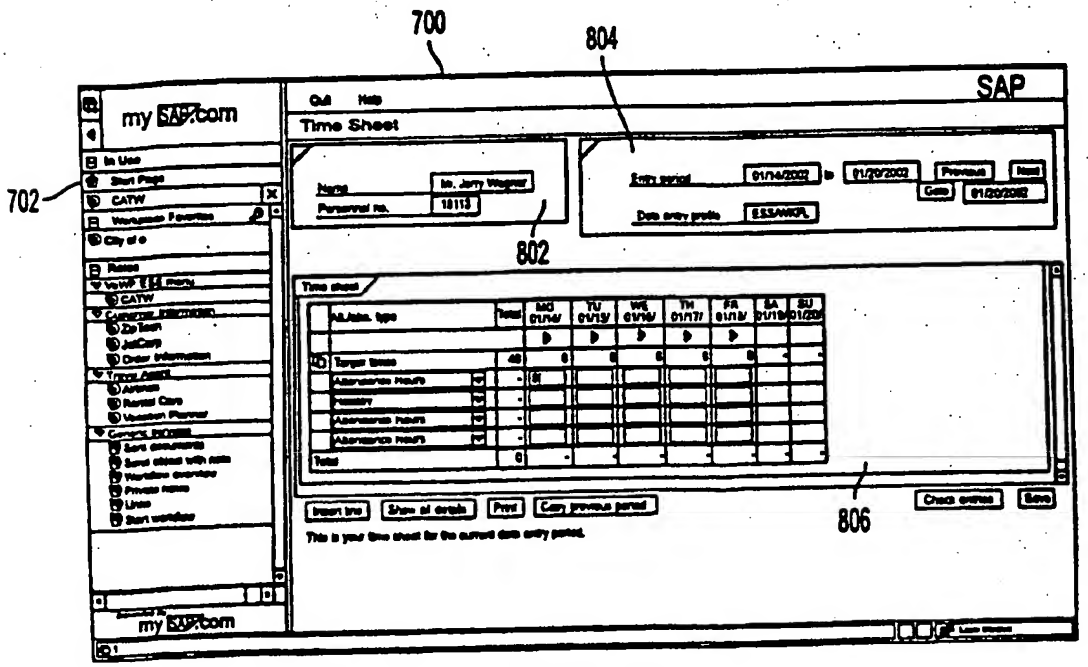
700
804
702
802
806
SAP
my SAP.com
Time Sheet

FIG. 14

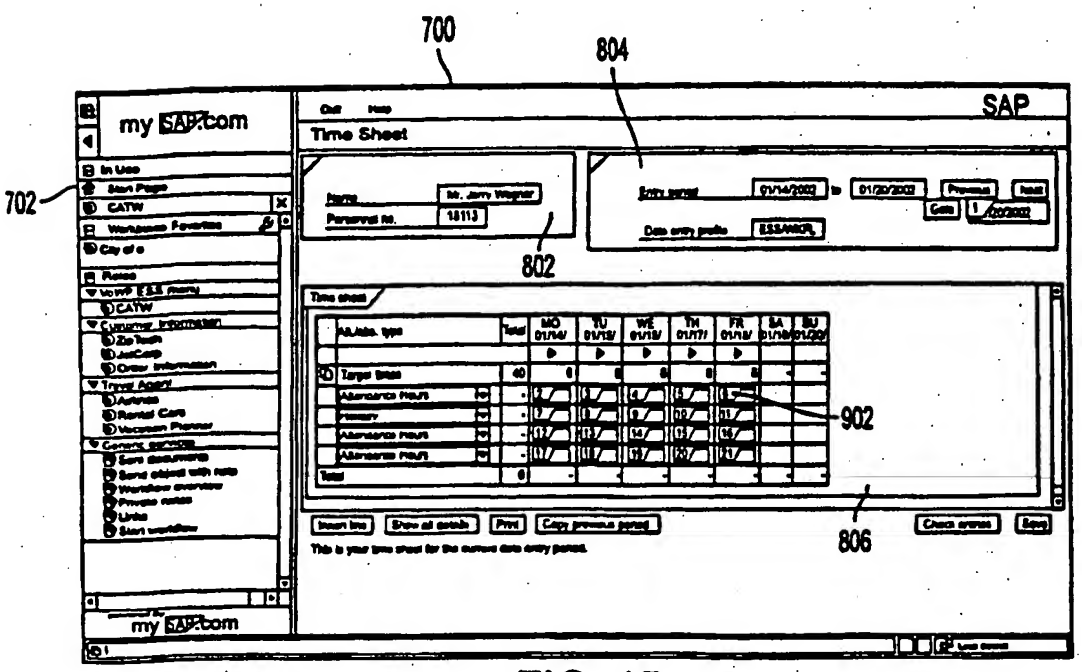
700
804
702
802
902
806
my SAP.com
SAP
Time Sheet

FIG. 15

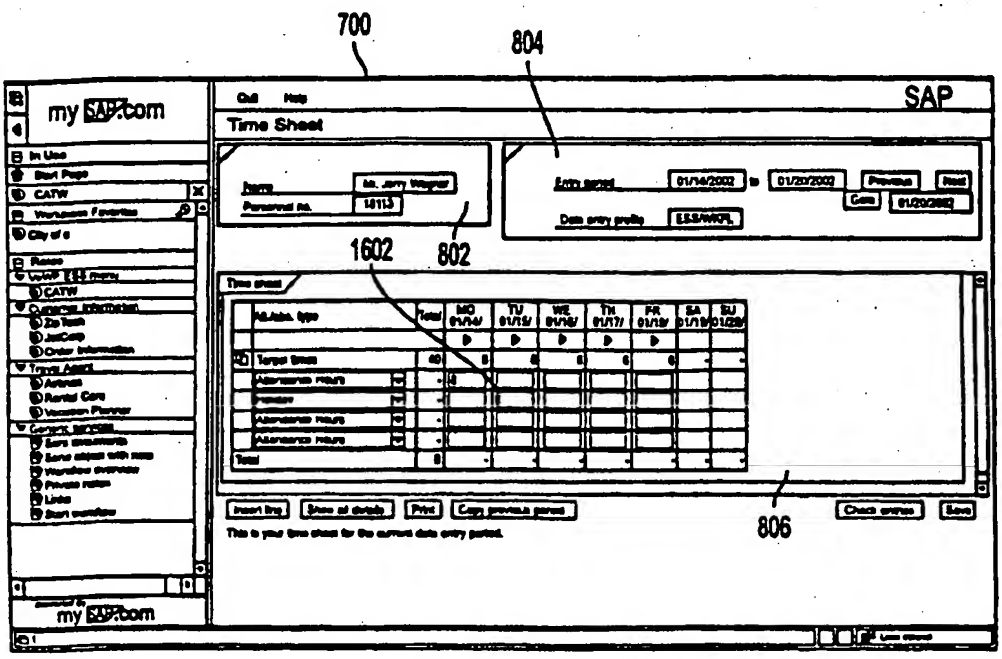
700
804
1602
802
806
my SAP.com
SAP
Time Sheet

FIG. 16

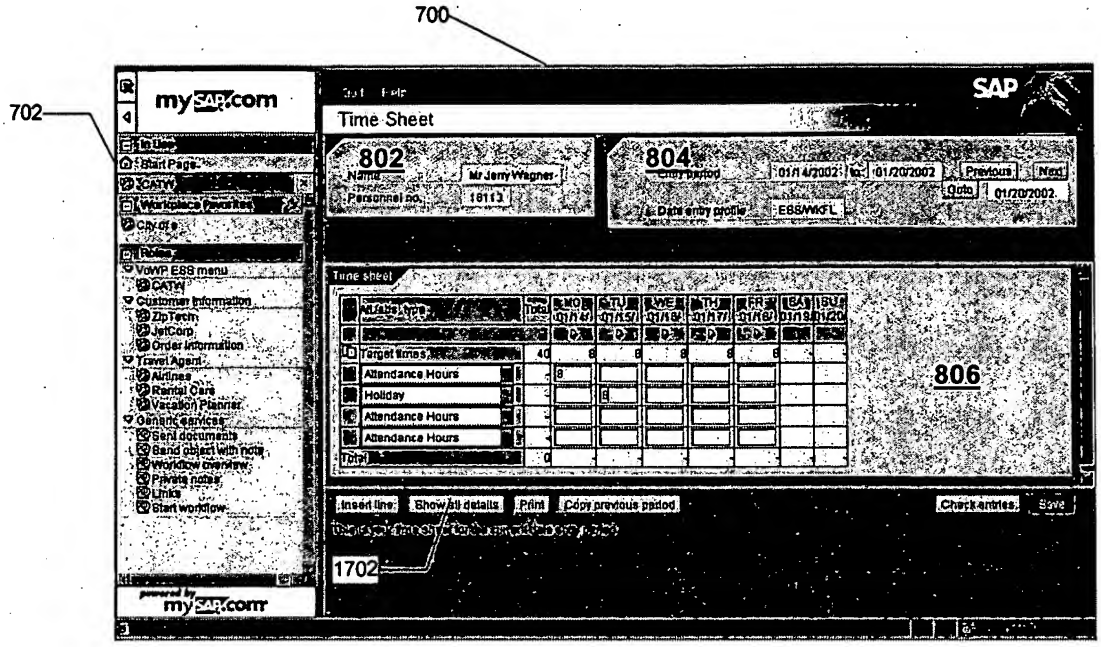
700
702
mySAP.com
SAP
Time Sheet
802
804
806
1702
Insert line
Show all details
Print
Copy previous period
Check entries
Save

FIG. 17

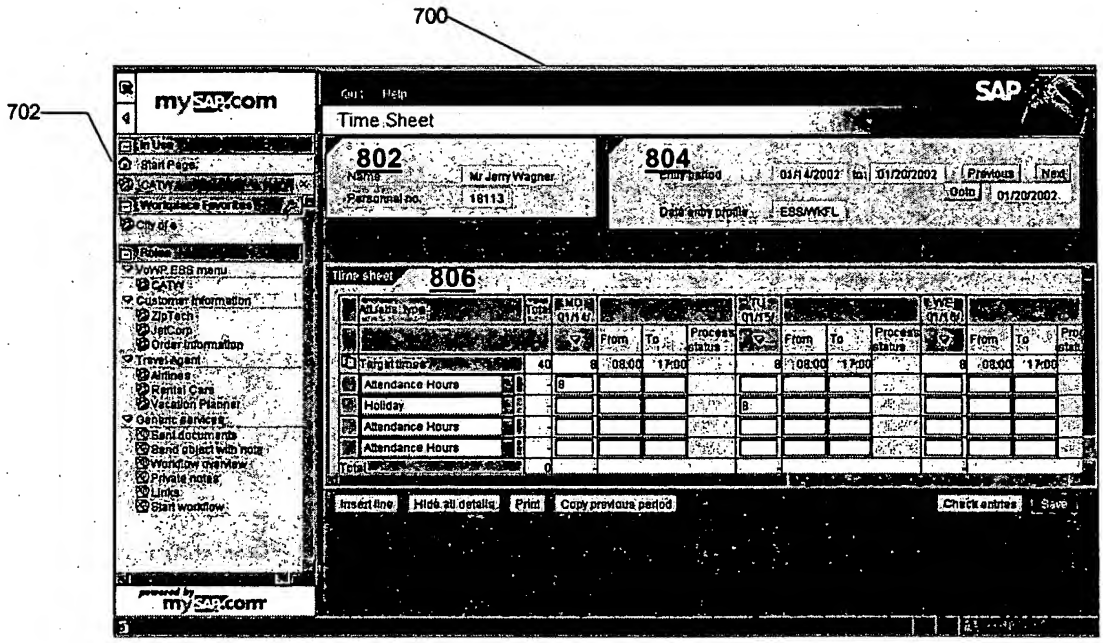
700
702
mySAP.com
SAP
Time Sheet
802
804
806
Insert line
Hide all details
Print
Copy previous period
Check entries
Save

FIG. 18

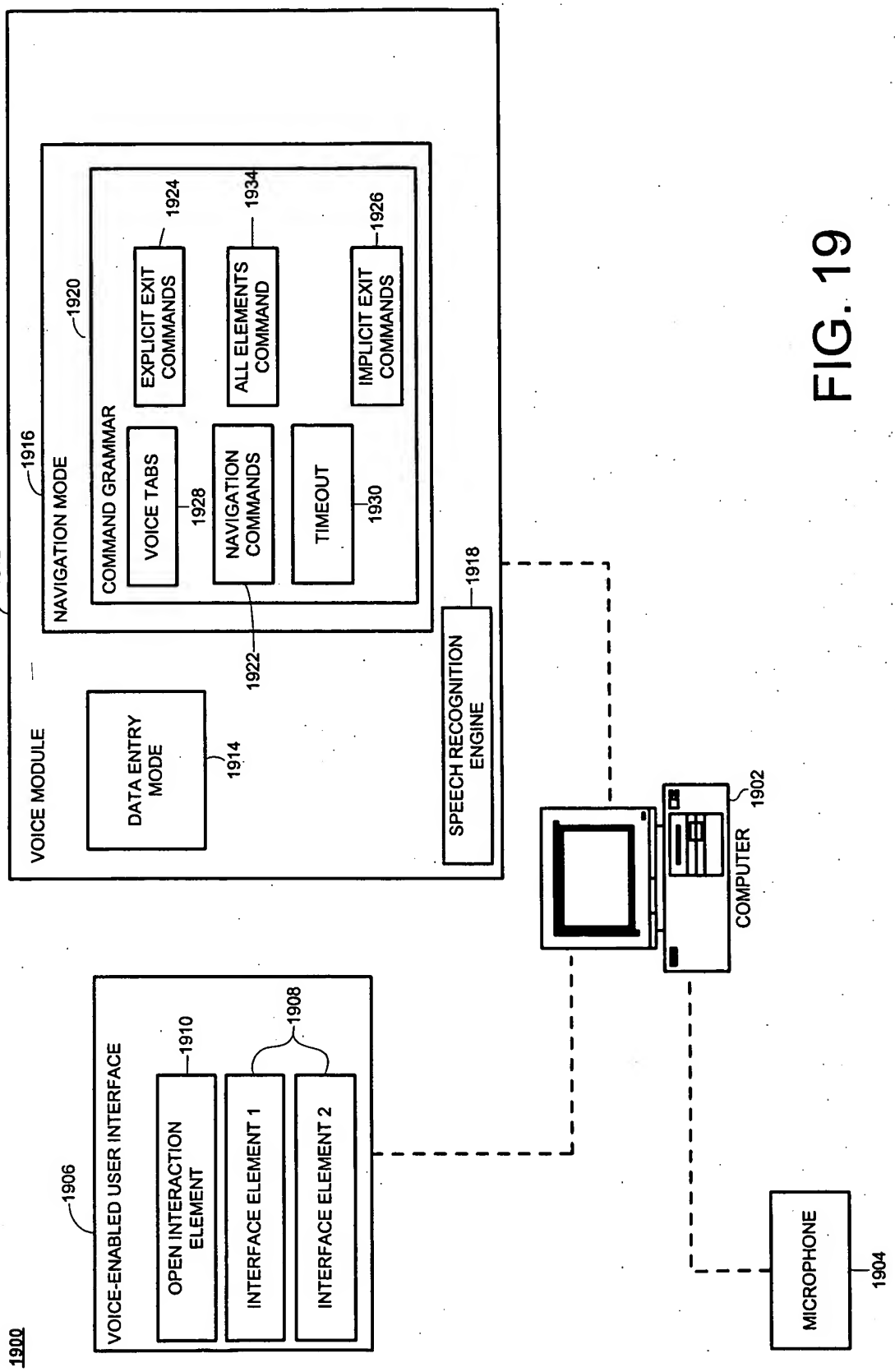
1900
VOICE-ENABLED USER INTERFACE
1906
OPEN INTERACTION ELEMENT
1910
INTERFACE ELEMENT 1
INTERFACE ELEMENT 2
1908
VOICE MODULE
1912
NAVIGATION MODE
1916
COMMAND GRAMMAR
1920
EXPLICIT EXIT COMMANDS
1924
ALL ELEMENTS COMMAND
1934
IMPLICIT EXIT COMMANDS
1926
VOICE TABS
1928
NAVIGATION COMMANDS
TIMEOUT
1930
1922
DATA ENTRY MODE
1914
SPEECH RECOGNITION ENGINE
1918
COMPUTER
1902
MICROPHONE
1904

FIG. 19

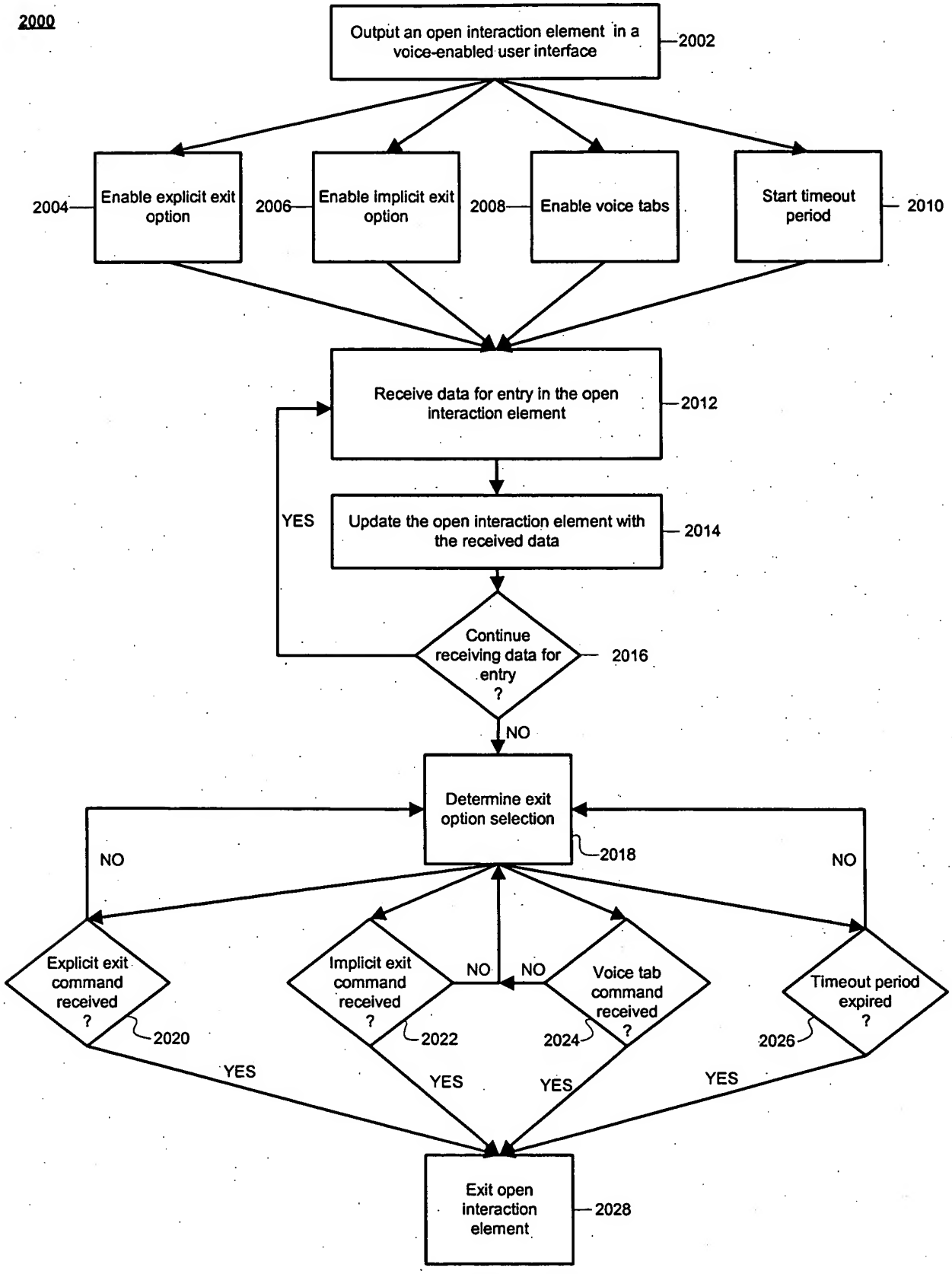
2000
Output an open interaction element in a voice-enabled user interface
2002
Enable explicit exit option
2004
Enable implicit exit option
2006
Enable voice tabs
2008
Start timeout period
2010
Receive data for entry in the open interaction element
2012
Update the open interaction element with the received data
2014
YES
Continue receiving data for entry ?
2016
NO
Determine exit option selection
2018
NO
NO
Explicit exit command received ?
2020
Implicit exit command received ?
2022
NO
NO
Voice tab command received ?
2024
Timeout period expired ?
2026
YES
YES
YES
YES
Exit open interaction element
2028

FIG. 20

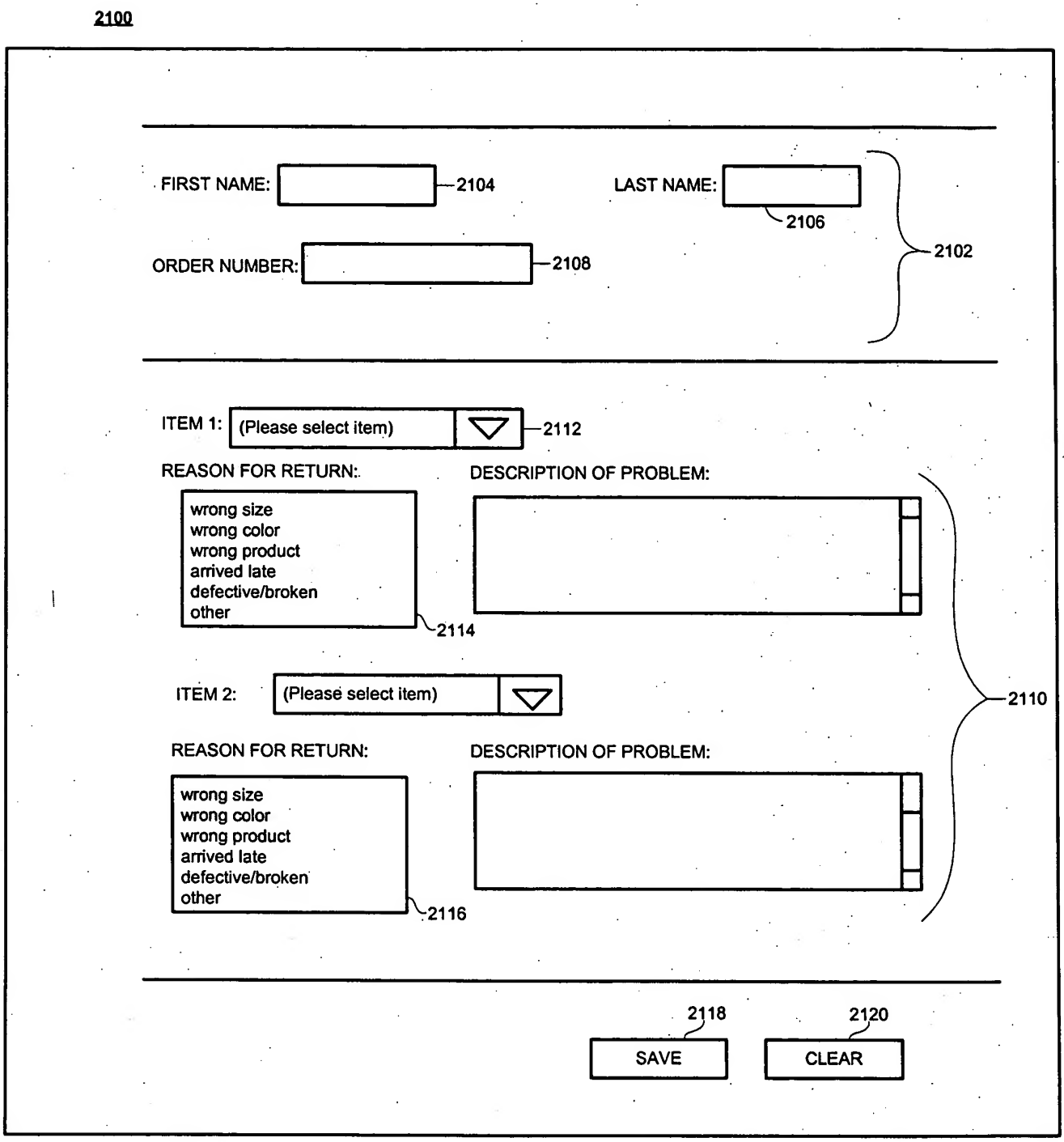
2100
FIRST NAME:
2104
LAST NAME:
2106
ORDER NUMBER:
2108
2102
ITEM 1:
(Please select item)
2112
REASON FOR RETURN:
DESCRIPTION OF PROBLEM:
wrong size
wrong color
wrong product
arrived late
defective/broken
other
2114
ITEM 2:
(Please select item)
REASON FOR RETURN:
DESCRIPTION OF PROBLEM:
wrong size
wrong color
wrong product
arrived late
defective/broken
other
2116
2110
2118
SAVE
2120
CLEAR

FIG. 21